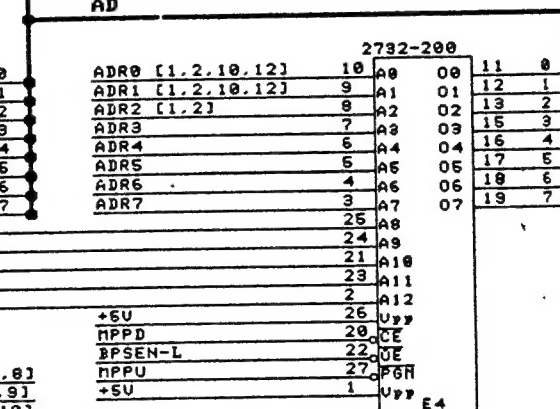
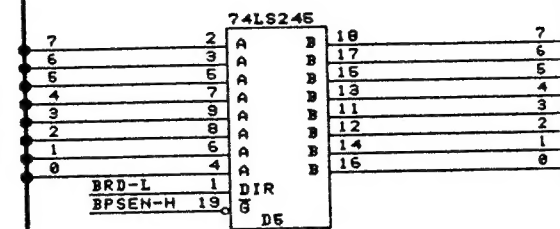
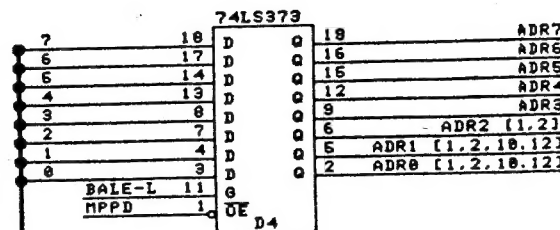
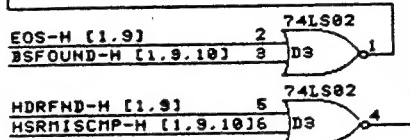
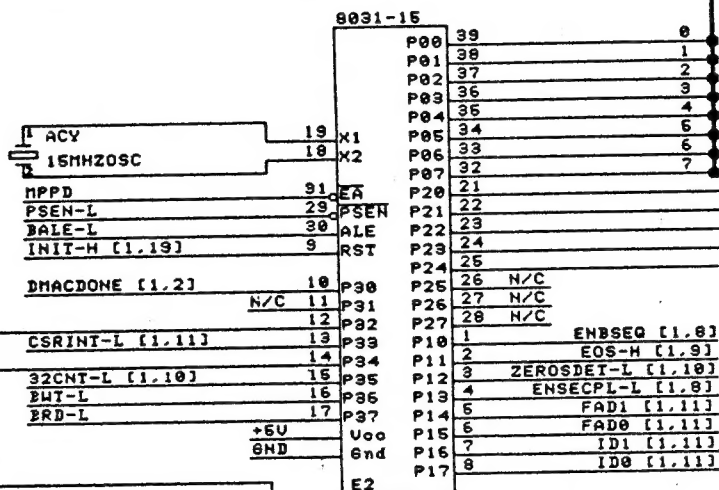
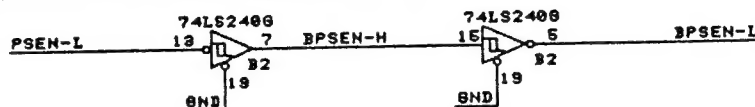
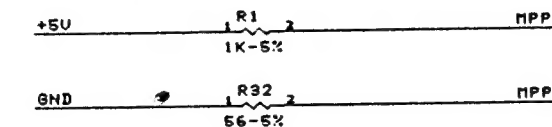
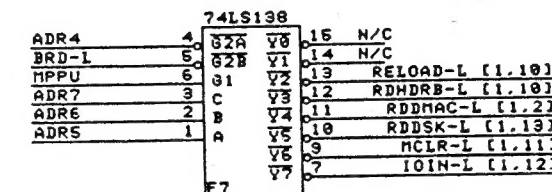
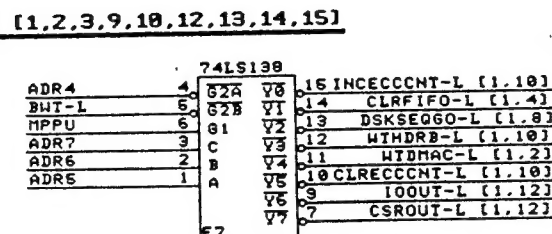


74LS240 18 1 LED 2 +5V
 FAULT-M [1.9] 2 1 FI2
 1 1
 GND
 SELF TEST FAILURE LED
 LED IS ON DURING SELF TEST
 LED IS TURNED OFF IF SELF TEST PASS

[illegible]

COPY NO. *L714*

		74LS138			
MPPD	4	62A	V8	15	LDUBDK-L (1.15)
BWT-L	5	62B	V1	14	LDLBDK-L (1.14)
ADR4	6	G1	V7	13	LDUNIT-L (1.15)
ADR7	3	C	V3	12	LOADCMD-L (1.9)
ADR6	2	B	V4	11	MTXADR-H (1.3)
ADR5	1	A	V6	10	H/C
			V9	9	H/C
			V7	7	DMARST-L (1.2.4)
		D7			



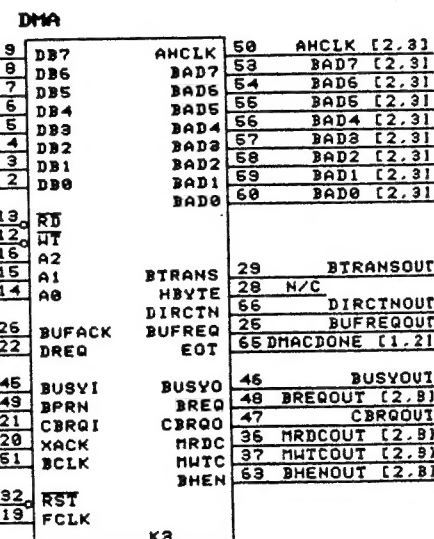
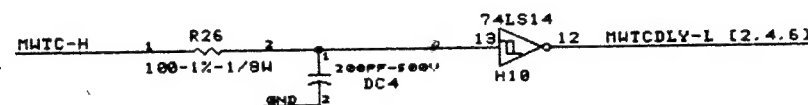
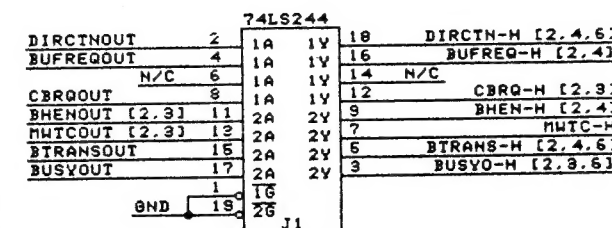
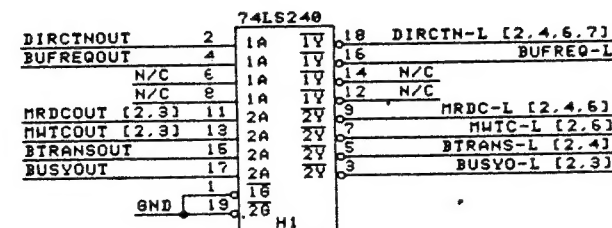
DRAWN 08 MAY 86
CHECKED 08 MAY 86
ENGR APPD BLS
TESTING EXT
PROJ MGR GP

TITLE	451
MICROPROCESSOR & EPROM	

SIZE B	DRAWING NO. 300-160-400	REV G1
SHEET	1 OF 21	LEVEL 2

74LS245

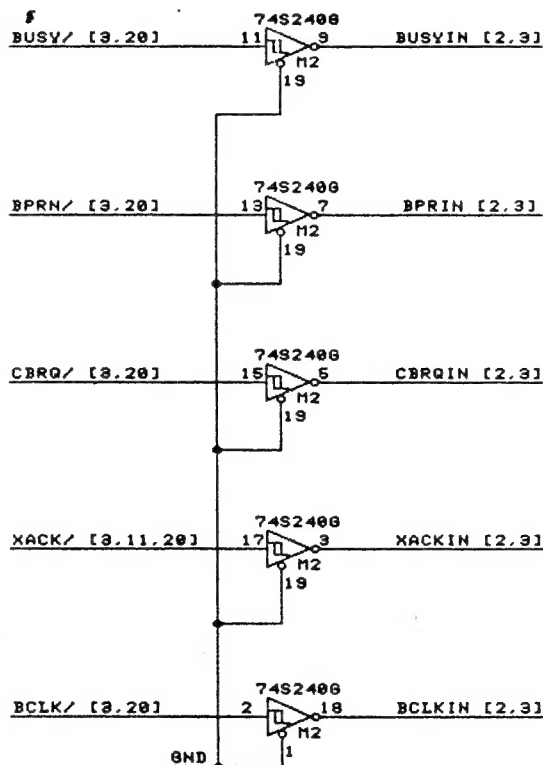
Pin	Label
7	7
6	6
5	5
4	4
3	3
2	2
1	1
0	0
18	A
16	B
15	C
14	D
13	E
12	F
11	G
10	H
19	DIR
1	H3



SIZE B	DRAWING NO. 300-160-400	REV G1
SHEET	2 OF 21	LEVEL 2

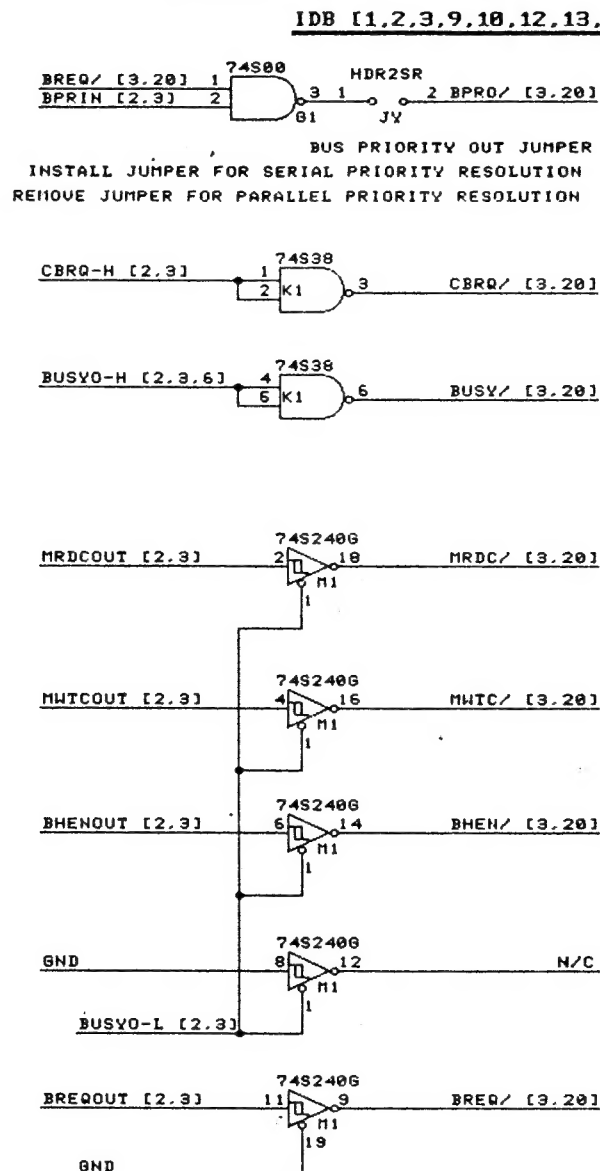
COPY NO. L 714

MULTIBUS CONTROL SIGNAL RECEIVERS



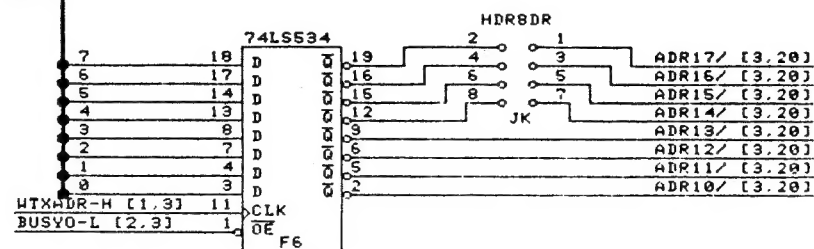
4

MULTIBUS CONTROL SIGNAL DRIVERS

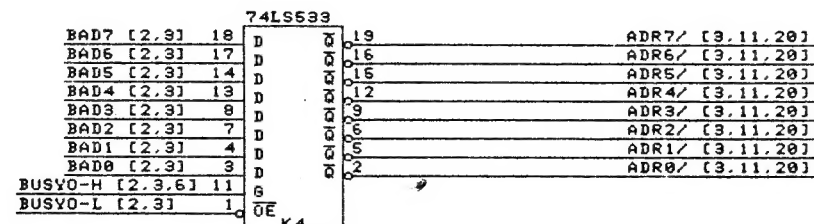
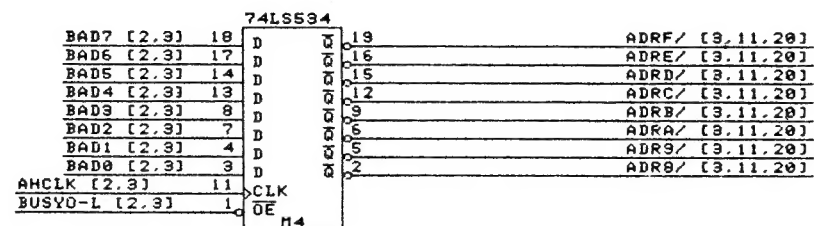


3

MULTIBUS ADDRESS BUS DRIVERS



EXTENDED ADDRESS JUMPERS
INSTALL JUMPERS FOR 24 BIT ADDRESSING
REMOVE JUMPERS FOR 20&16 BIT ADDRESSING



TITLE: 451
DMA MULTIBUS INTERFACE

SIZE	DRAWING NO.	REV
B	300-160-400	G
SHEET 3 OF 21		LEVEL 2

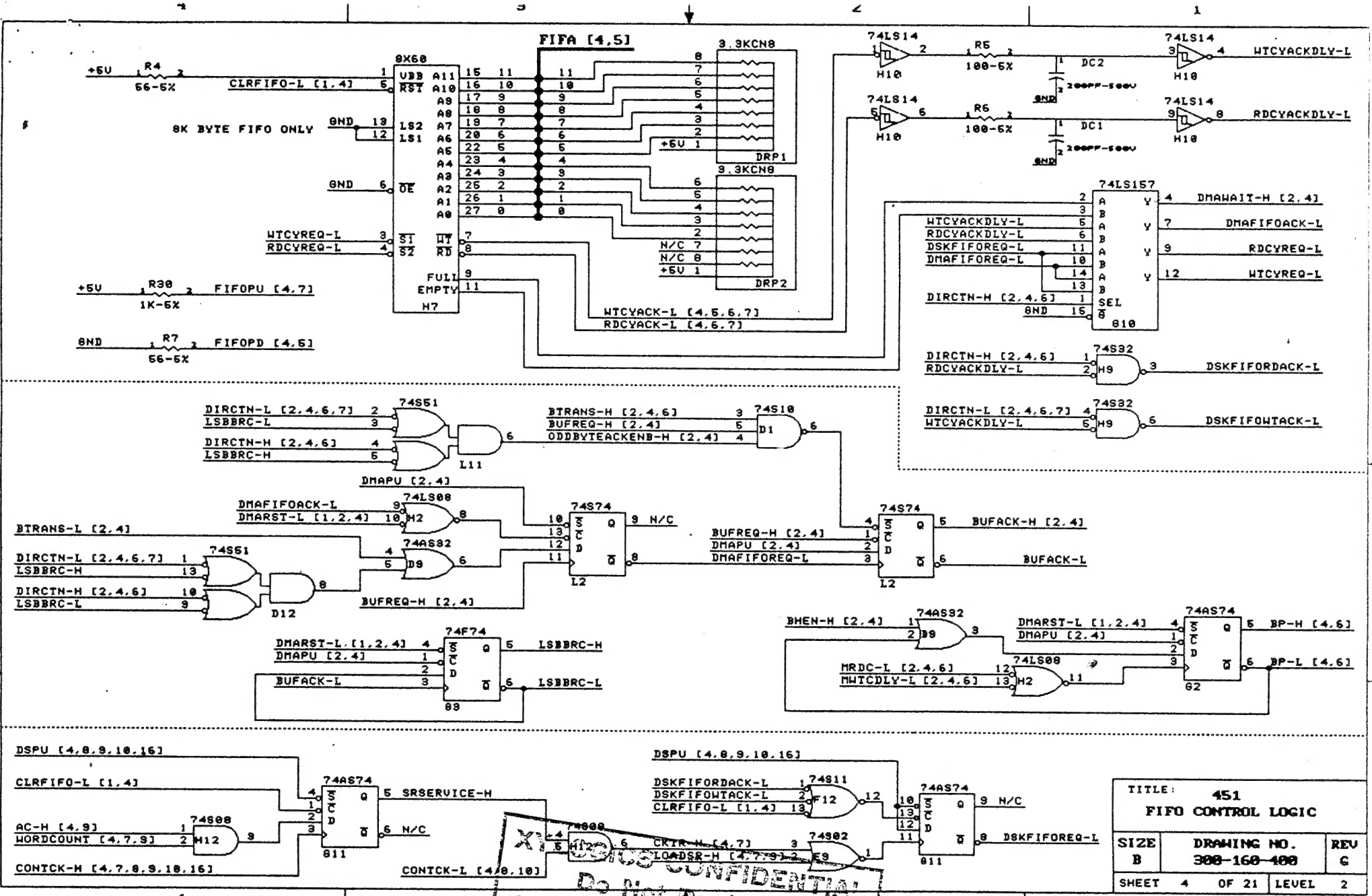
1

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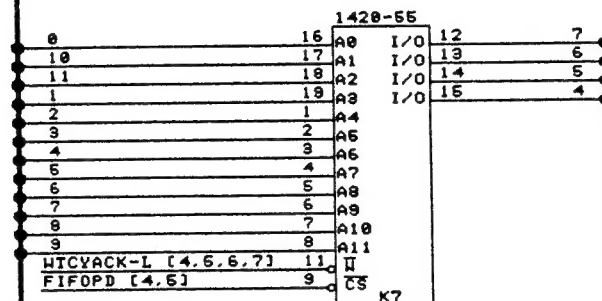
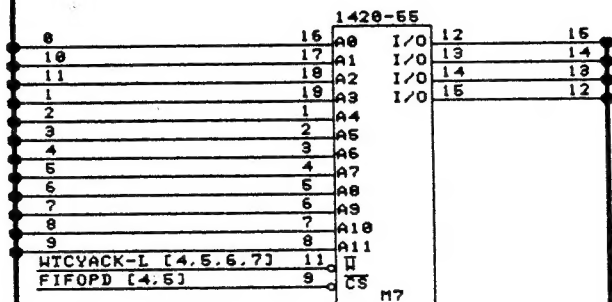
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TITLE: 451 FIFO CONTROL LOGIC		
SIZE B	DRAWING NO. 300-160-100	REV C
SHEET 4	OF 21	LEVEL 2

FIFA [4.5]

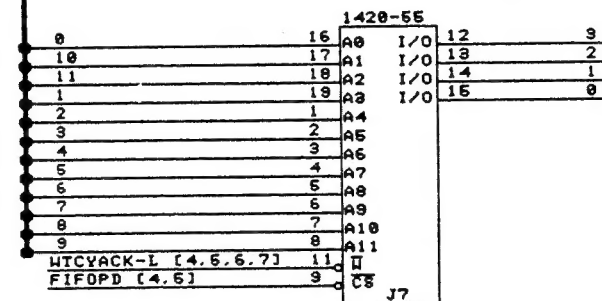
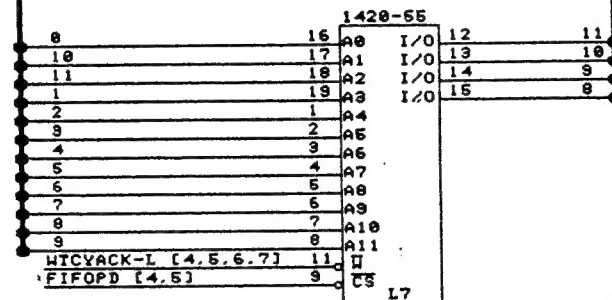
+5V 1 C37 2 GND
.047uF-50V

+5V 1 C35 2 GND
.047uF-50V



+5V 1 C36 2 GND
.047uF-50V

+5V 1 C42 2 GND
.047uF-50V



FIFD [5.6.7]

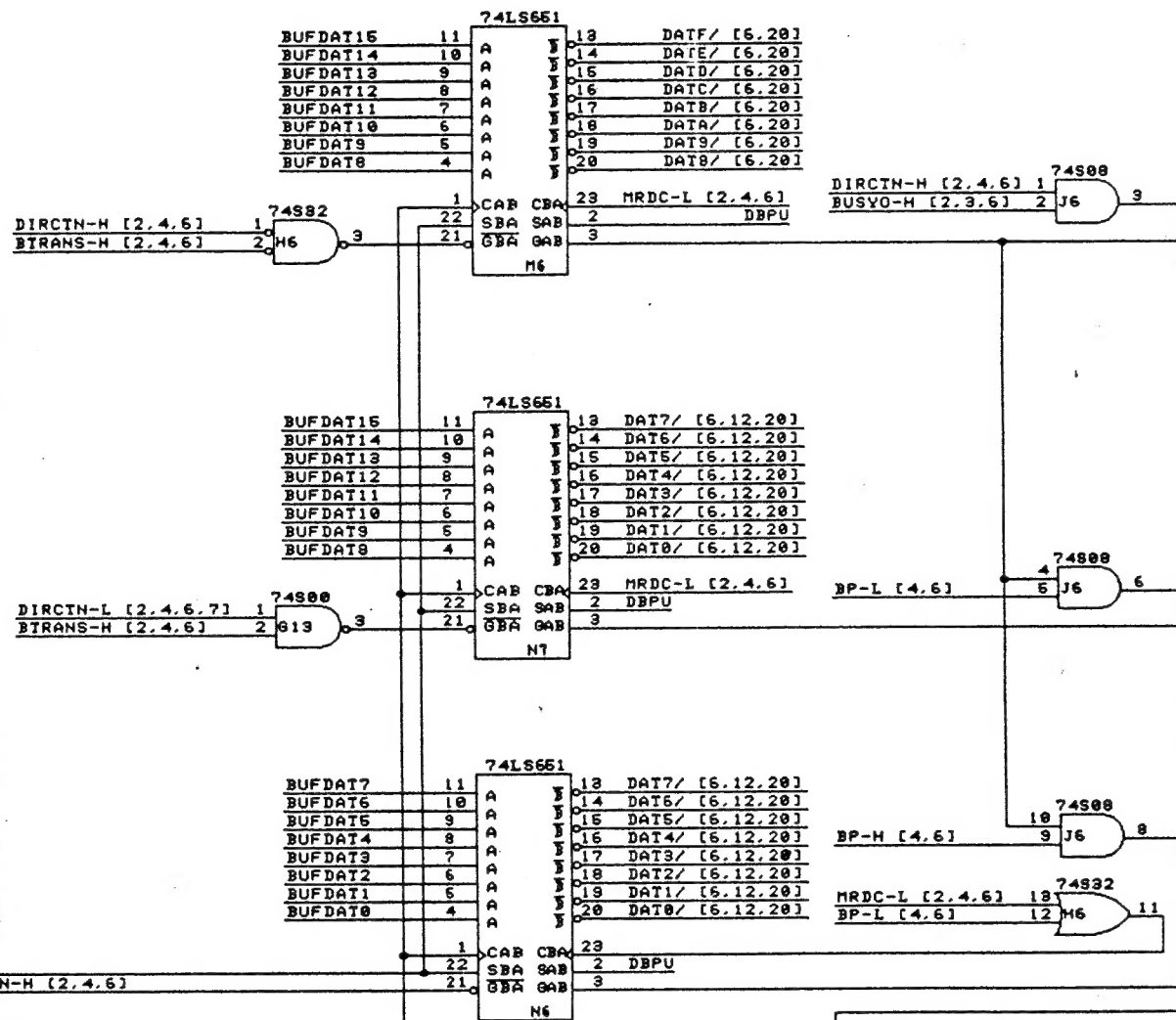
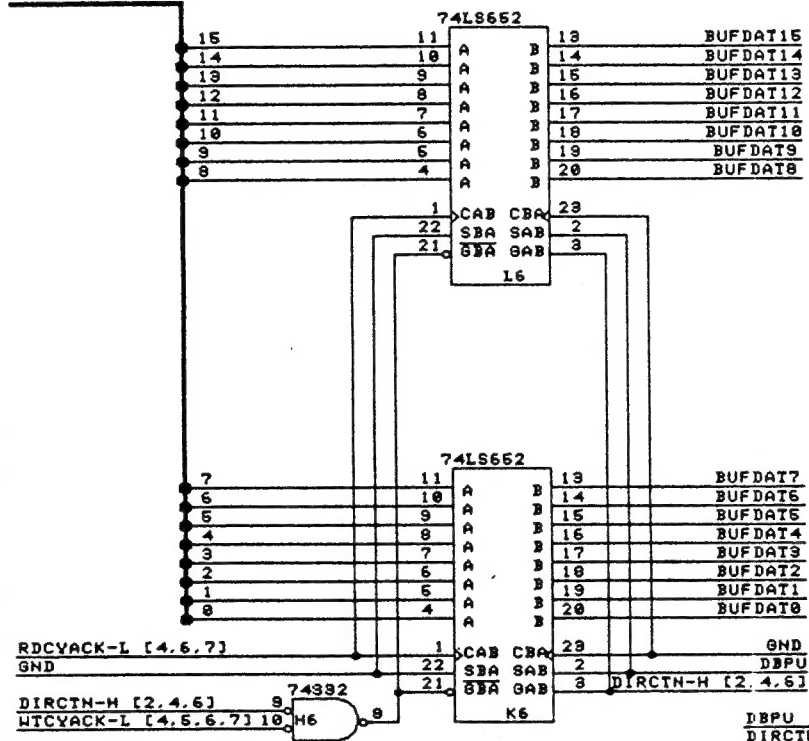
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TITLE: 451 FIFO RAMS		
SIZE B	DRAWING NO. 300-168-400	REV G
SHEET 5 OF 21	LEVEL 2	

FIFD [5,6,7]



BUFREQDLY-H [2.6]

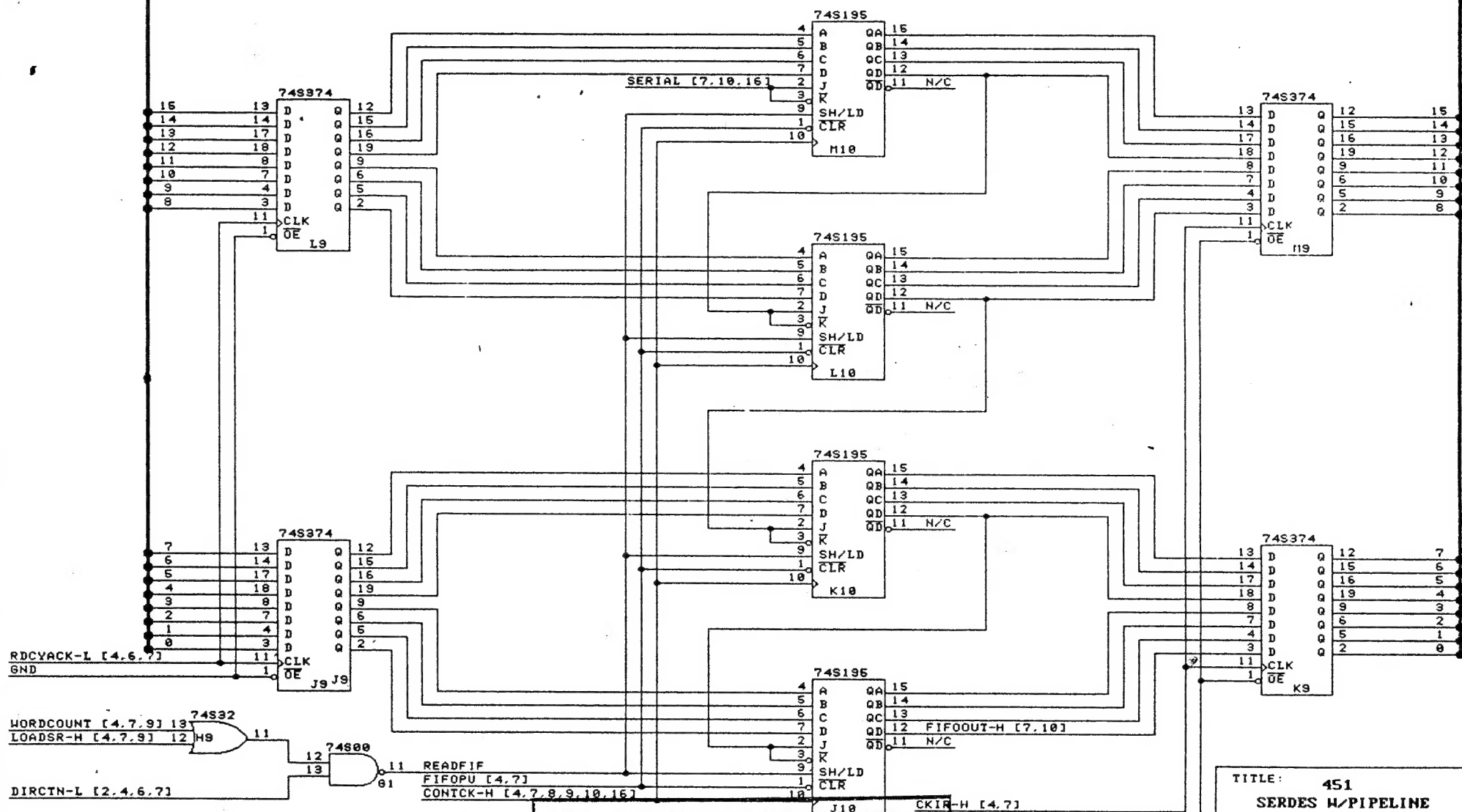
XYLOGICS **CONFIDENTIAL**
 MUTC-L (2,6) 74S00
 MUTCIV-L (2,4,6) 6,819
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TITLE: 451
MB/FIFO DATA BUS INTERFACE

SIZE B	DRAWING NO. 300-160-400		REV G
SHEET	6 OF 21	LEVEL	2



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TITLE: 451
 SERDES W/PIPELINE

SIZE B	DRAWING NO. 300-160-400	REV G
SHEET 7 OF 21	LEVEL 2	

INIT-L [8.9.10.14.15.19]

ENBRCK-L

WDGATE-H [8.9.14] 1

74S04
F8

74F74
D8
Q
N/C

74F74
D8
Q
ENBSCK-L

SERVOCK-H [8.16.17.18]

74S04
F8

RDCLOCK-L [8.17.18]

74S04
F8

DSPU [4.8.9.10.16]

74F74
C7
Q
N/C

74F74
C7
Q
ENBRCK-L

74S51
D12

CONTCK-H [4.7.8.9.10.16]

74S2406
E13
GND

CONTCK-L [4.8.10]

REGISTERED FROM (27S25)
SYNCHRONOUS ENABLE TRI-STATE
PULLDOWN

R50
300-5X-1/8W
GND

INIT-L [8.9.10.14.15.19]
ENBSCK-L

74S08
K12

DSPU [4.8.9.10.16]

CLKCMD-L [8.9]

ENBSEQ [1.8] 4
74LS2406
N10
GND

ENBSEQ-L [8.9] 6
74LS2406
N10
GND

CLKCMD-L [8.9] 4
ENBSEQ-H [8.10] 5
74S08
K12

DSKSEQ000-L [1.8] 13
SECTPLS-L [1.8] 12
74S08
K12

74AS74
C9
Q
N/C

CONTCK-H [4.7.8.9.10.16]

74F74
F13
Q
N/C

74F74
F13
Q
N/C

GO+PULSE [8.9]

SP-L [8.13]
ENSECPL-L [1.8]
UNITA0-H [8.15.16]
INDEX-H [8.13]

74LS02
D3

74S51
L11

SECTPLS-L

74S2406
E13
GND

SECTPLS-H [8.10]

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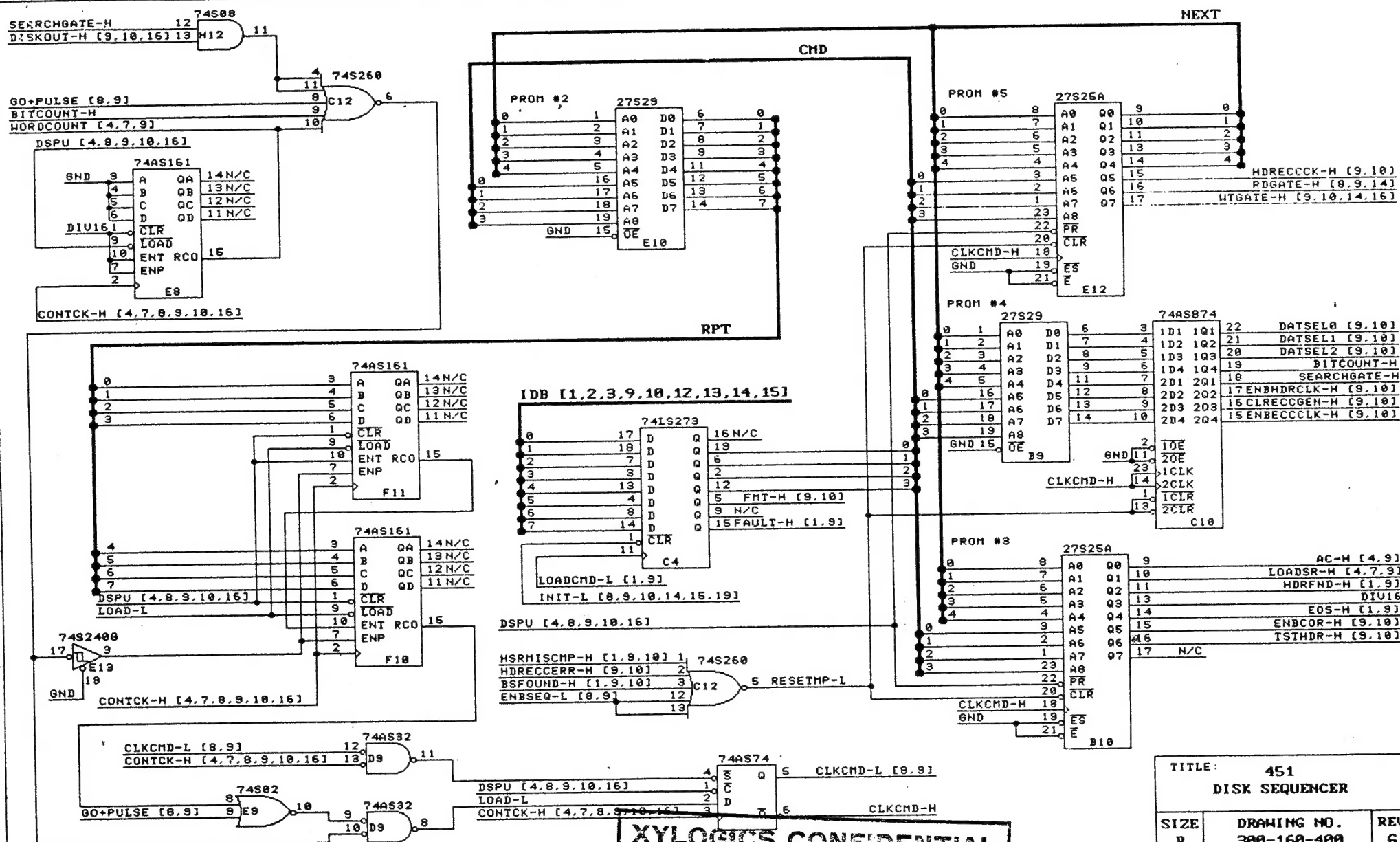
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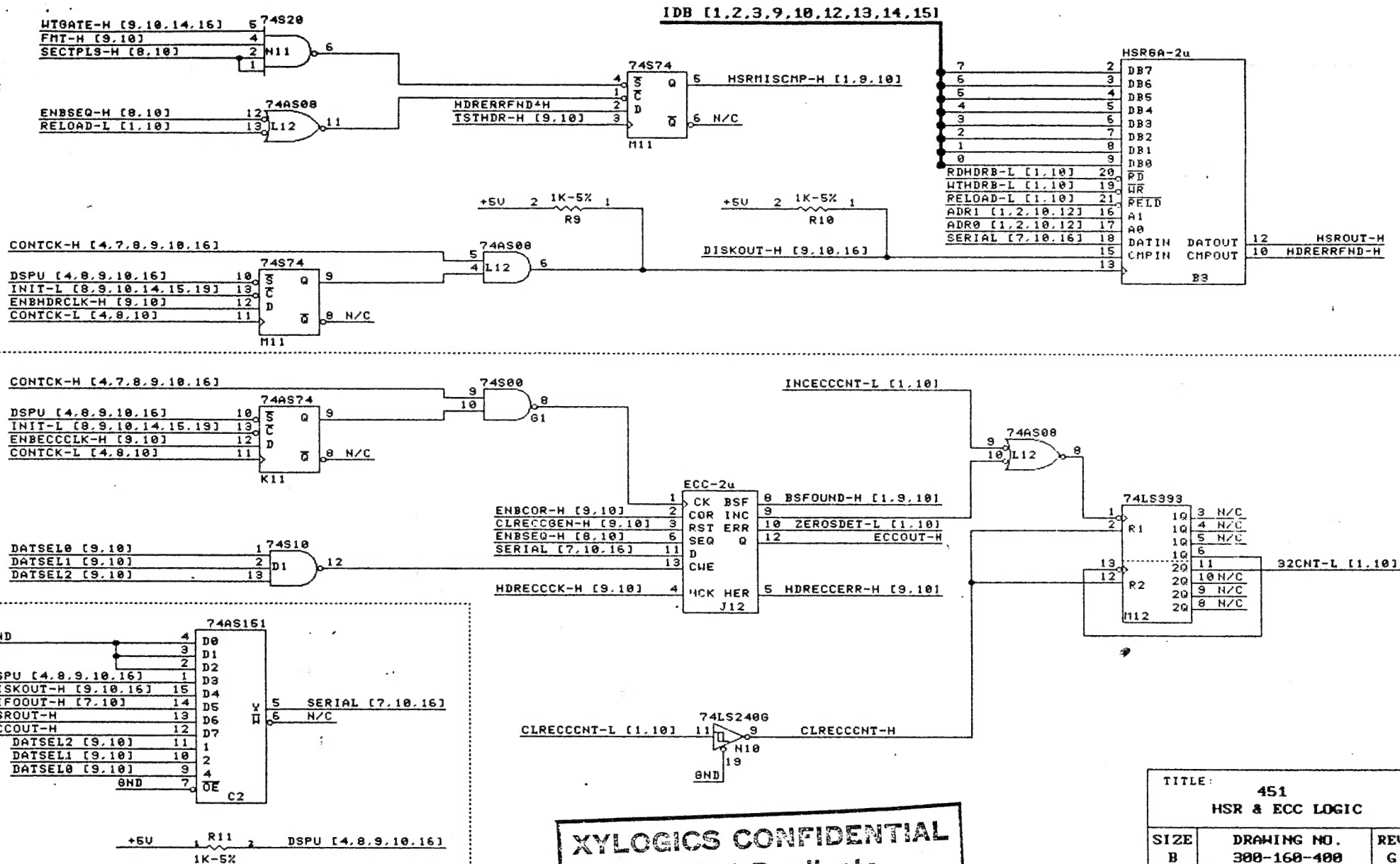
L714

TITLE: 451		
CLOCK & EVENT SYNCHRONIZER		
SIZE B	DRAWING NO. 300-160-400	REV G
SHEET 8	OF 21	LEVEL 2



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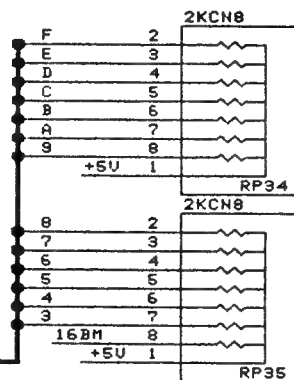
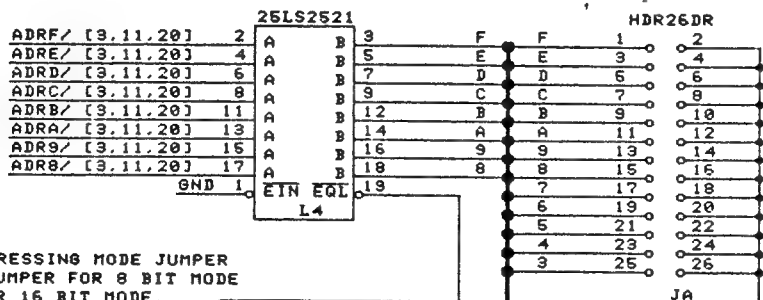
TITLE: 451 DISK SEQUENCER		
SIZE B	DRAWING NO. 300-160-400	REV G
SHEET 9	OF 21	LEVEL 2



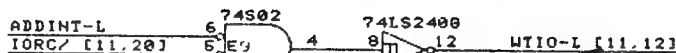
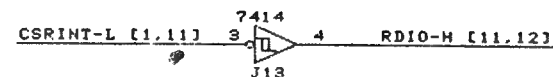
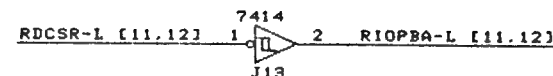
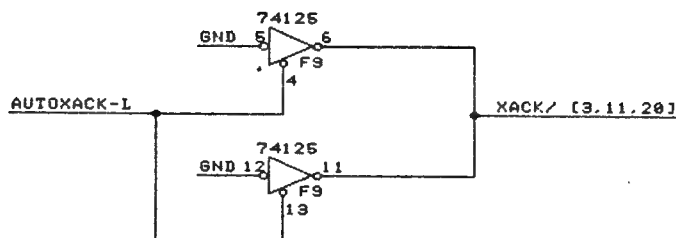
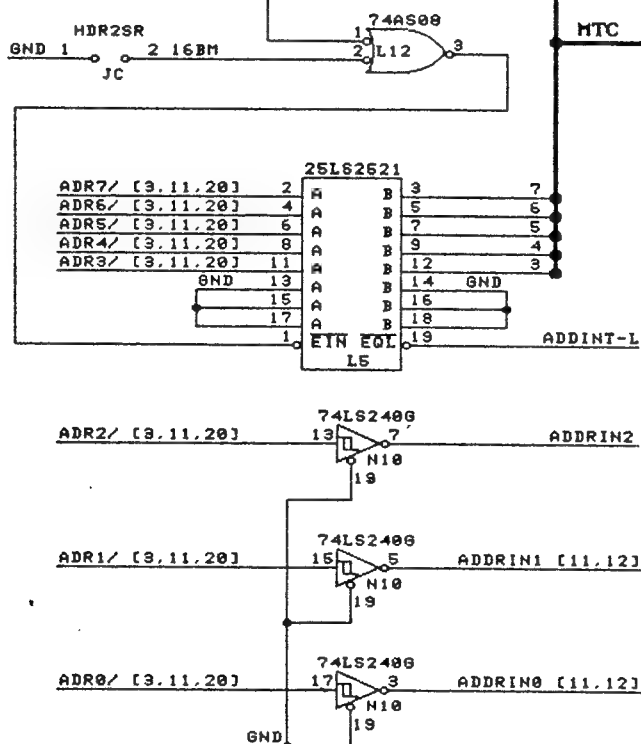
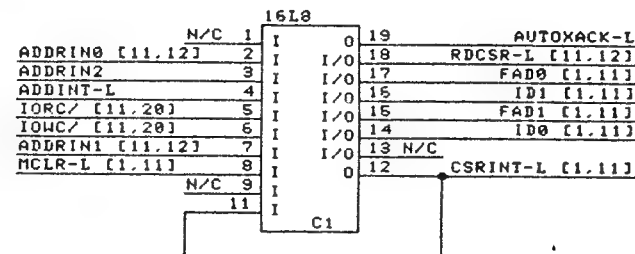
MULTIBUS ADDRESS BUS RECEIVERS/BUFFERS

BASE ADDRESS JUMPERS

INSTALL JUMPER FOR RESPECTIVE ADDRESS BIT ON.
REMOVE JUMPER FOR BIT OFF.

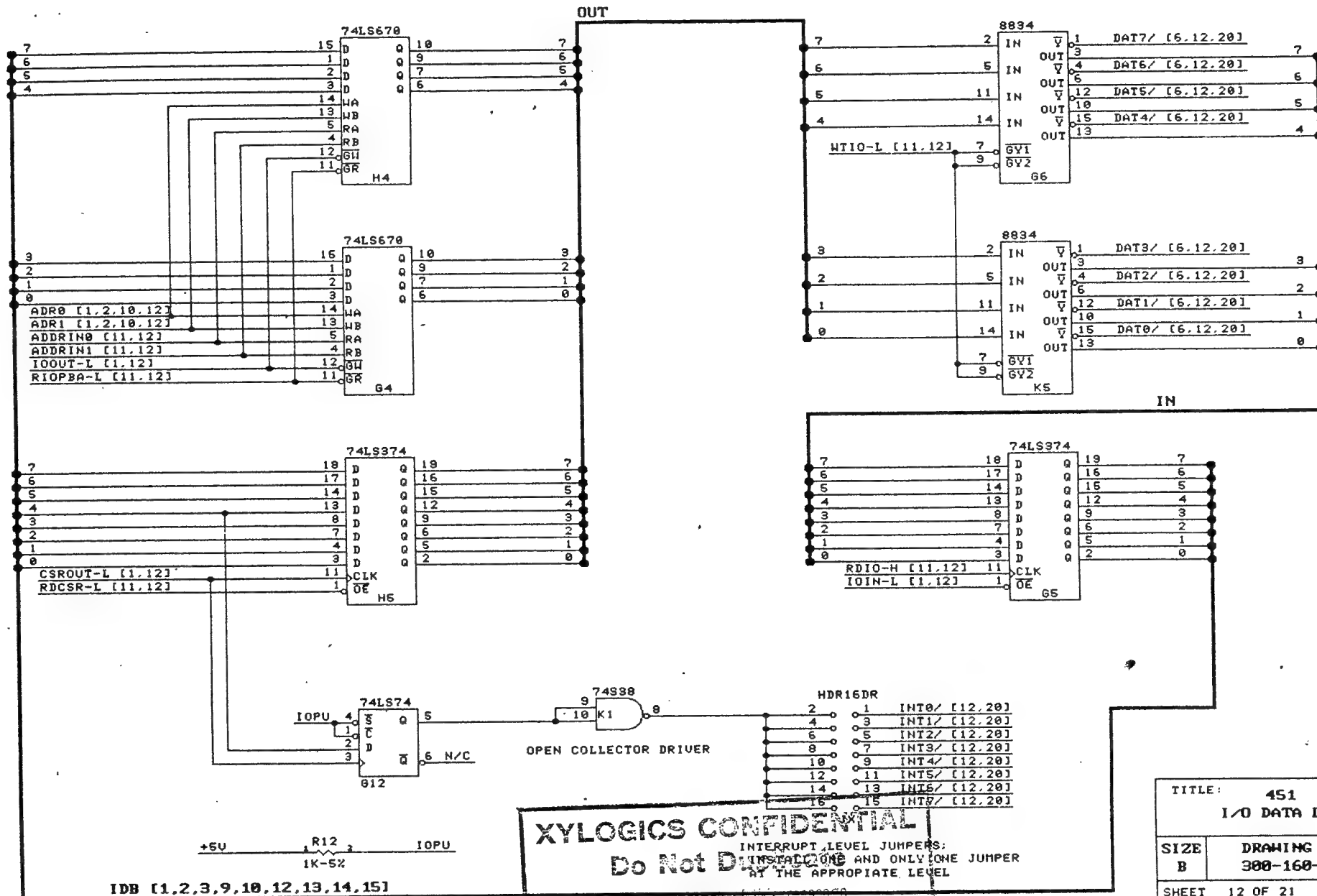


USE PAL P/N 181-001-012



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TITLE: 451 I/O CONTROL LOGIC		
SIZE B	DRAWING NO. 300-160-400	REV G
SHEET 11 OF 21	LEVEL 2	

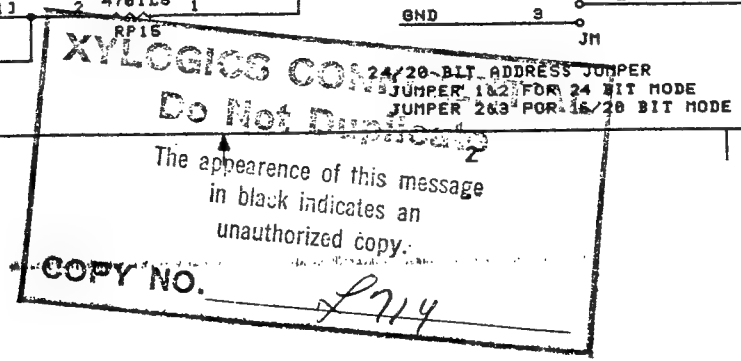


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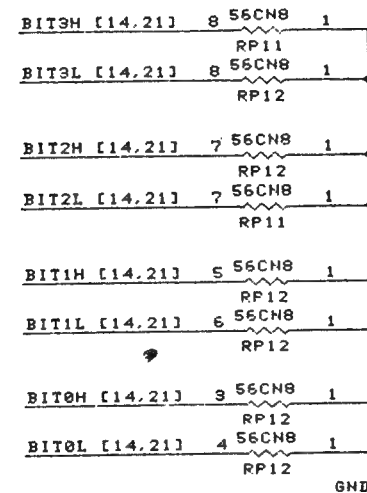
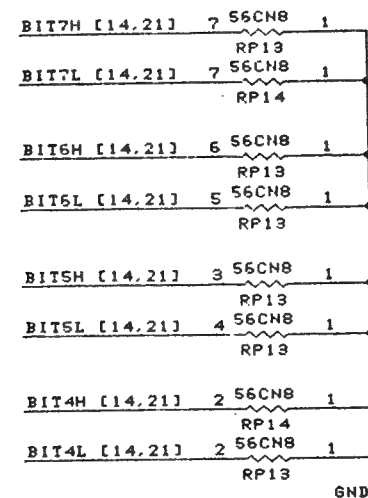
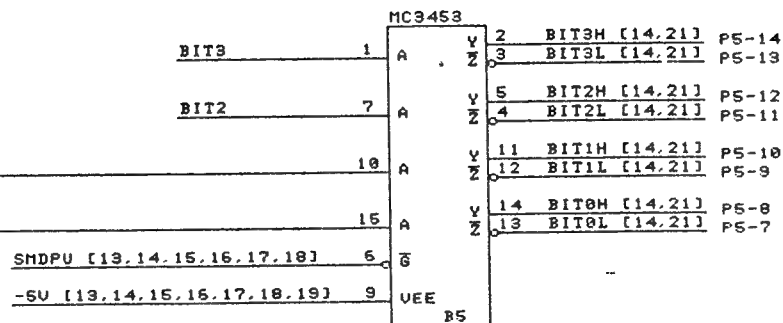
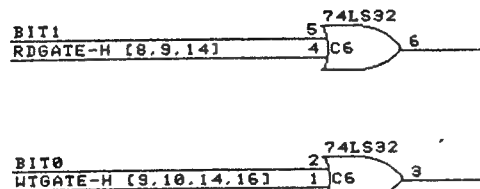
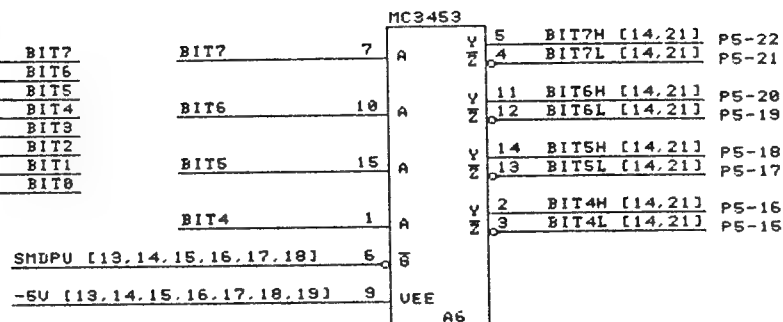
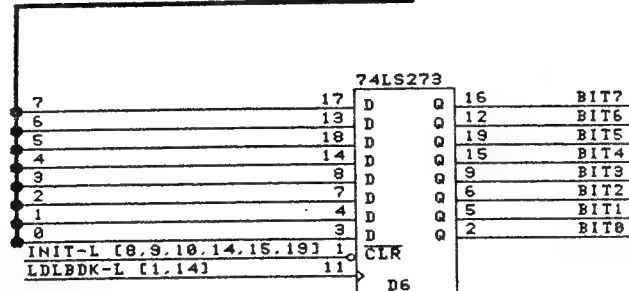
INTERRUPT LEVEL JUMPERS:
INSTALL ONE AND ONLY ONE JUMPER
AT THE APPROPRIATE LEVEL

TITLE: 451 I/O DATA LOGIC		
SIZE B	DRAWING NO. 300-160-400	REV G
SHEET 12 OF 21	LEVEL 2	

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6IDB [1,2,3,9,10,12,13,14,15]



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TITLE: 451
1/2 'A CABLE' DRIVE & BIAS

SIZE B	DRAWING NO. 300-160-400	REV G
-----------	----------------------------	----------

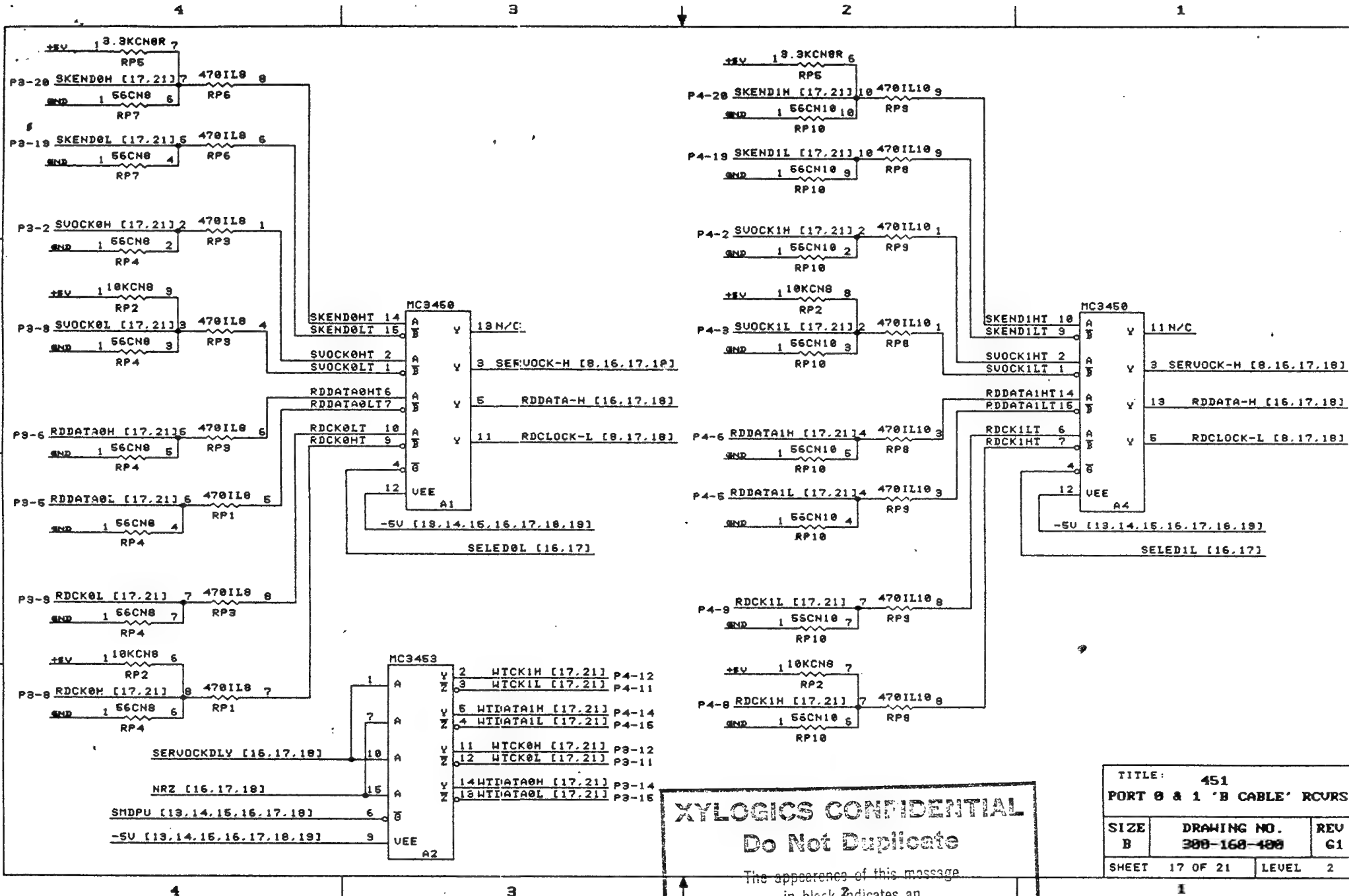
SHEET 14 OF 21	LEVEL 2
----------------	---------

1



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1

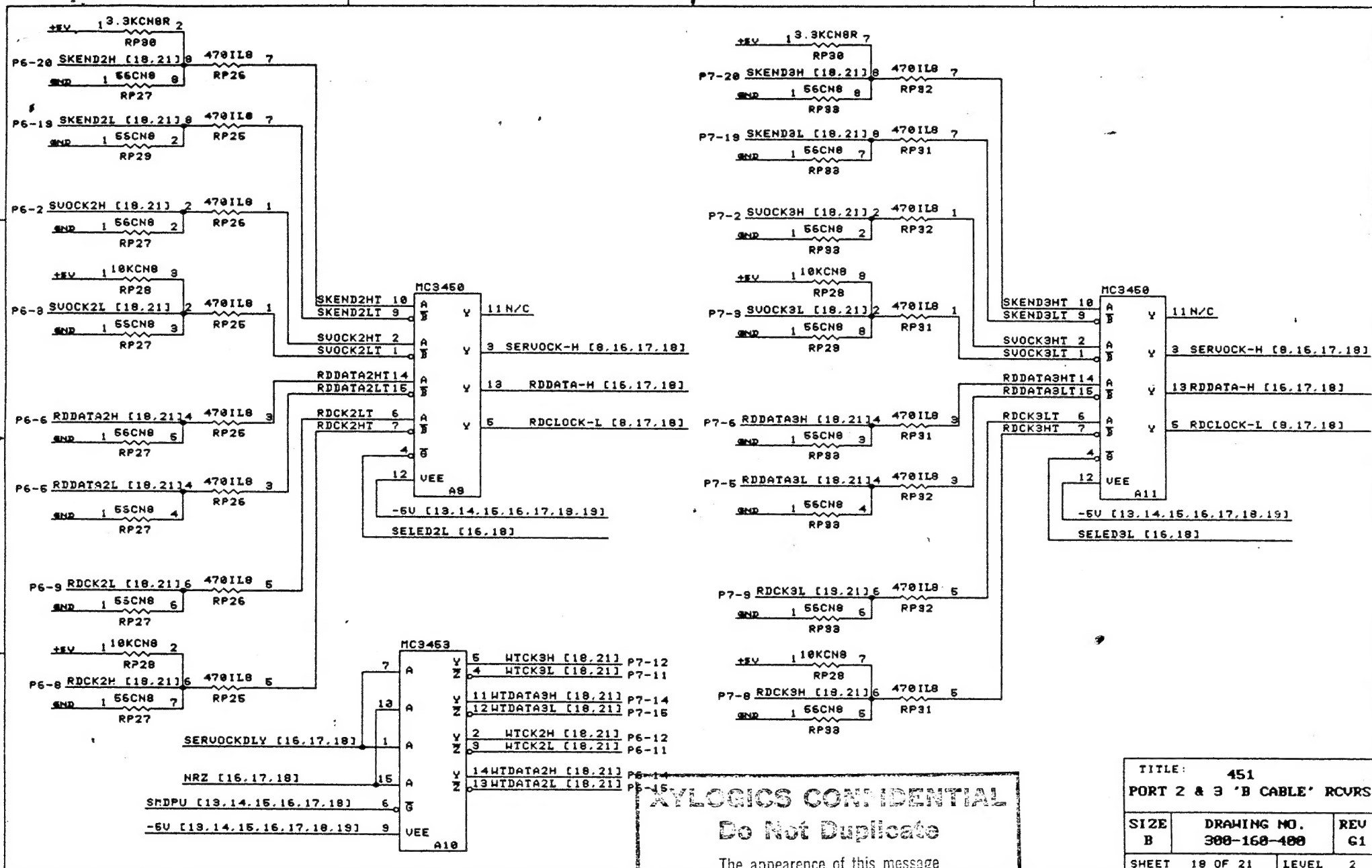


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TITLE: 451		
PORT 0 & 1 'B CABLE' RCURS		
SIZE	DRAWING NO.	REV
B	300-160-400	G1
SHEET	17 OF 21	LEVEL 2



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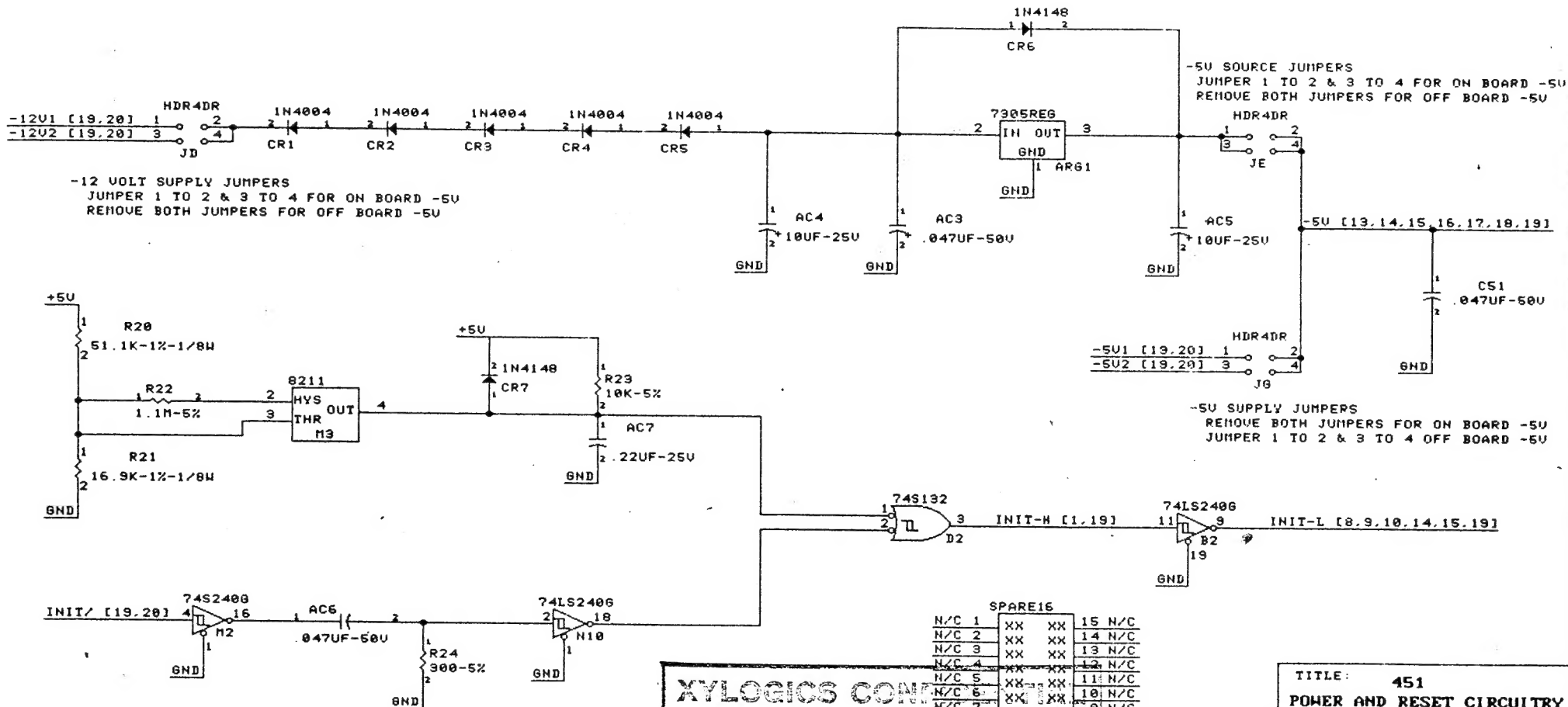
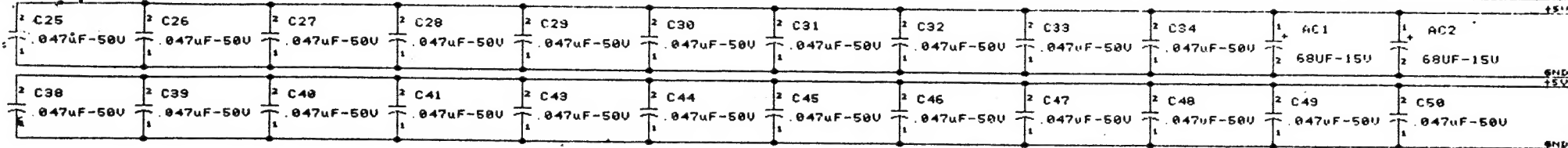
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TITLE: 451
PORT 2 & 3 'B CABLE' RCURS

SIZE	DRAWING NO.	REV
B	300-160-400	G1
SHEET 10 OF 21	LEVEL 2	



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SPARE16			
N/C 1	XX	XX	15 N/C
N/C 2	XX	XX	14 N/C
N/C 3	XX	XX	13 N/C
N/C 4	XX	XX	12 N/C
N/C 5	XX	XX	11 N/C
N/C 6	XX	XX	10 N/C
N/C 7	XX	XX	9 N/C
H11			

TITLE: 451
POWER AND RESET CIRCUITRY

SIZE	DRAWING NO.	REV
B	300-160-400	G
SHEET	19 OF 21	LEVEL 2

ECON86/156

GND	1	GND	GND	2	GND
+5V	3	+5V	+5V	4	+5V
+5V	5	+5V	+5V	6	+5V
N/C	7	+12V	+12V	8	N/C
-5V1 [19.20]	9			10	-5V2 [19.20]
GND	11	GND	GND	12	GND
BCLK/ [3.20]	13	BCLK*	INIT*	14	INIT/ [19.20]
BPRN/ [3.20]	15	BPRN*	BPRO*	16	BPRO/ [3.20]
BUSV/ [3.20]	17	BUSV*	BREQ*	18	BREQ/ [3.20]
MRDC/ [3.20]	19	MRDC*	MWTC*	20	MWTC/ [3.20]
IORC/ [11.20]	21	IORC*	IOHC*	22	IOHC/ [11.20]
XACK/ [3.11.20]	23	XACK*	INH1*	24	N/C
N/C	25	LOCK*	INH2*	26	N/C
BHEN/ [3.20]	27	BHEN*	AD10*	28	ADR10/ [3.20]
CBRQ/ [3.20]	29	CBRQ*	AD11*	30	ADR11/ [3.20]
N/C	31	CCLK*	AD12*	32	ADR12/ [3.20]
N/C	33	INTA*	AD13*	34	ADR13/ [3.20]
INT6/ [12.20]	35	INT6*	INT7*	36	INT7/ [12.20]
INT4/ [12.20]	37	INT4*	INT5*	38	INT5/ [12.20]
INT2/ [12.20]	39	INT2*	INT9*	40	INT9/ [12.20]
INT0/ [12.20]	41	INT0*	INT1*	42	INT1/ [12.20]
ADRE/ [3.11.20]	43	ADRE*	ADRF*	44	ADRF/ [3.11.20]
ADRC/ [3.11.20]	45	ADRC*	ADRD*	46	ADRD/ [3.11.20]
ADRA/ [3.11.20]	47	ADRA*	ADRB*	48	ADRB/ [3.11.20]
ADR8/ [3.11.20]	49	ADR8*	ADR9*	50	ADR9/ [3.11.20]
ADR6/ [3.11.20]	51	ADR6*	ADR7*	52	ADR7/ [3.11.20]
ADR4/ [3.11.20]	53	ADR4*	ADR5*	54	ADR5/ [3.11.20]
ADR2/ [3.11.20]	55	ADR2*	ADR3*	56	ADR3/ [3.11.20]
ADR0/ [3.11.20]	57	ADR0*	ADR1*	58	ADR1/ [3.11.20]
DATE/ [6.20]	59	DATE*	DATF*	60	DATF/ [6.20]
DATC/ [6.20]	61	DATC*	DATD*	62	DATD/ [6.20]
DAT8/ [6.20]	63	DAT8*	DATB*	64	DATB/ [6.20]
DAT9/ [6.20]	65	DAT9*	DAT9*	66	DAT9/ [6.20]
DAT6/ [6.12.20]	67	DAT6*	DAT7*	68	DAT7/ [6.12.20]
DAT4/ [6.12.20]	69	DAT4*	DAT5*	70	DAT5/ [6.12.20]
DAT2/ [6.12.20]	71	DAT2*	DAT3*	72	DAT3/ [6.12.20]
DAT0/ [6.12.20]	73	DAT0*	DAT1*	74	DAT1/ [6.12.20]
GND	75	GND	GND	76	GND
N/C	77			78	N/C
-12V1 [19.20]	79	-12V	-12V	80	-12V2 [19.20]
+5V	81	+5V	+5V	82	+5V
+5V	83	+5V	+5V	84	+5V
GND	85	GND	GND	86	GND

P1

COMPONENT SIDE

SOLDER SIDE

ECON60/100

N/C	1	2	N/C
N/C	3	4	N/C
N/C	5	6	N/C
N/C	7	8	N/C
N/C	9	10	N/C
N/C	11	12	N/C
N/C	13	14	N/C
N/C	15	16	N/C
N/C	17	18	ACLOW/ [15.20]
N/C	19	20	N/C
N/C	21	22	N/C
N/C	23	24	N/C
N/C	25	26	N/C
N/C	27	28	N/C
N/C	29	30	N/C
N/C	31	32	N/C
N/C	33	34	N/C
N/C	35	36	N/C
N/C	37	38	N/C
N/C	39	40	N/C
N/C	41	42	MACTIVE/ [1.20]
N/C	43	44	N/C
N/C	45	46	N/C
N/C	47	48	N/C
N/C	49	50	N/C
N/C	51	52	N/C
N/C	53	54	N/C
ADR16/ [3.20]	55	ADR16*	ADR17/ [3.20]
ADR14/ [3.20]	57	ADR14*	ADR15/ [3.20]
N/C	59	60	N/C

P2

COMPONENT SIDE

SOLDER SIDE

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TITLE: **451**
MULTIBUS CONNECTORS

SIZE B	DRAWING NO. 300-160-400	REV G
SHEET 20 OF 21	LEVEL 2	

CONNRA68/100									
TAG1L [15.21]	1	TAG1L	TAG1H	2	TAG1H [15.21]				
TAG2L [15.21]	3	TAG2L	TAG2H	4	TAG2H [15.21]				
TAG3L [15.21]	5	TAG3L	TAG3H	6	TAG3H [15.21]				
BIT0L [14.21]	7	BIT0L	BIT0H	8	BIT0H [14.21]				
BIT1L [14.21]	9	BIT1L	BIT1H	10	BIT1H [14.21]				
BIT2L [14.21]	11	BIT2L	BIT2H	12	BIT2H [14.21]				
BIT3L [14.21]	13	BIT3L	BIT3H	14	BIT3H [14.21]				
BIT4L [14.21]	15	BIT4L	BIT4H	16	BIT4H [14.21]				
BIT5L [14.21]	17	BIT5L	BIT5H	18	BIT5H [14.21]				
BIT6L [14.21]	19	BIT6L	BIT6H	20	BIT6H [14.21]				
BIT7L [14.21]	21	BIT7L	BIT7H	22	BIT7H [14.21]				
BIT8L [15.21]	23	BIT8L	BIT8H	24	BIT8H [15.21]				
BIT9L [15.21]	25	BIT9L	BIT9H	26	BIT9H [15.21]				
OCDL [15.21]	27	OCDL	OCDH	28	OCDH [15.21]				
FLTL [13.21]	29	FLTL	FLTH	30	FLTH [13.21]				
SKERRL [13.21]	31	SKERRL	SKERRH	32	SKERRH [13.21]				
ONCVLL [13.21]	33	ONCVLL	ONCVH	34	ONCVH [13.21]				
INDEXL [13.21]	35	INDEXL	INDEXH	36	INDEXH [13.21]				
RDVYL [13.21]	37	RDVYL	RDVH	38	RDVH [13.21]				
N/C 39		AMFL	AMFH	40	N/C				
DPBSYL [13.21]	41	DPBSYL	DPBSYH	42	DPBSYH [13.21]				
UNSELTA9L [15.21]	43	UNSLTL	UNSLTH	44	UNSELTA9H [15.21]				
UNSEL1L [15.21]	45	UNSL1L	UNSL1H	46	UNSEL1H [15.21]				
UNSEL2L [15.21]	47	UNSL2L	UNSL2H	48	UNSEL2H [15.21]				
SPL [13.21]	49	SPL	SPH	50	SPH [13.21]				
UNSEL4L [15.21]	51	UNSL4L	UNSL4H	52	UNSEL4H [15.21]				
UNSEL8L [15.21]	53	UNSL8L	UNSL8H	54	UNSEL8H [15.21]				
WTPOTL [13.21]	55	WTPRTL	WTPRTH	56	WTPOTH [13.21]				
GND	57	PICK	HOLD	58	GND				
BIT10L [15.21]	59	SPAREL	SPAREH	60	BIT10H [15.21]				

PS

CONNRA26/100

GND	1	GND	SUOCKH	2	SUOCK0H [17.21]				
SUOCK0L [17.21]	3	SUOCKL	GND	4	GND				
RDDATA0L [17.21]	5	RDDATL	RDDATH	6	RDDATA0H [17.21]				
GND	7	GND	RDCKH	8	RDCK0H [17.21]				
RDCK0L [17.21]	9	RDCKL	GND	10	GND				
WTCK0L [17.21]	11	WTCKL	WTCKH	12	WTCK0H [17.21]				
GND	13	GND	WTDATAH	14	WTDATA0H [17.21]				
WTDATA0L [17.21]	15	WTDATL	GND	16	GND				
UN0SELH [16.21]	17	UNSELH	UNSELL	18	UN0SELL [16.21]				
SKEND0L [17.21]	19	SKENDL	SKENDH	20	SKEND0H [17.21]				
GND	21	GND	RINDXH	22	N/C				
N/C 23		RINDXH	GND	24	GND				
N/C 25		RSPL	RSPH	26	N/C				

P3

CONNRA26/100

GND	1	GND	SUOCKH	2	SUOCK1H [17.21]				
SUOCK1L [17.21]	3	SUOCKL	GND	4	GND				
RDDATA1L [17.21]	5	RDDATL	RDDATH	6	RDDATA1H [17.21]				
GND	7	GND	RDCKH	8	RDCK1H [17.21]				
RDCK1L [17.21]	9	RDCKL	GND	10	GND				
WTCK1L [17.21]	11	WTCKL	WTCKH	12	WTCK1H [17.21]				
GND	13	GND	WTDATAH	14	WTDATA1H [17.21]				
WTDATA1L [17.21]	15	WTDATL	GND	16	GND				
UN1SELH [16.21]	17	UNSELH	UNSELL	18	UN1SELL [16.21]				
SKEND1L [17.21]	19	SKENDL	SKENDH	20	SKEND1H [17.21]				
GND	21	GND	RINDXH	22	N/C				
N/C 23		RINDXH	GND	24	GND				
N/C 25		RSPL	RSPH	26	N/C				

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CONNRA26/100

GND	1	GND	SUOCKH	2	SUOCK2H [18.21]				
SUOCK2L [18.21]	3	SUOCKL	GND	4	GND				
RDDATA2L [18.21]	5	RDDATL	RDDATH	6	RDDATA2H [18.21]				
GND	7	GND	RDCKH	8	RDCK2H [18.21]				
RDCK2L [18.21]	9	RDCKL	GND	10	GND				
WTCK2L [18.21]	11	WTCKL	WTCKH	12	WTCK2H [18.21]				
GND	13	GND	WTDATAH	14	WTDATA2H [18.21]				
WTDATA2L [18.21]	15	WTDATL	GND	16	GND				
UN2SELH [16.21]	17	UNSELH	UNSELL	18	UN2SELL [16.21]				
SKEND2L [18.21]	19	SKENDL	SKENDH	20	SKEND2H [18.21]				
GND	21	GND	RINDXH	22	N/C				
N/C 23		RINDXH	GND	24	GND				
N/C 25		RSPL	RSPH	26	N/C				

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CONNRA26/100

GND	1	GND	SUOCKH	2	SUOCK3H [18.21]				
SUOCK3L [18.21]	3	SUOCKL	GND	4	GND				
RDDATA3L [18.21]	5	RDDATL	RDDATH	6	RDDATA3H [18.21]				
GND	7	GND	RDCKH	8	RDCK3H [18.21]				
RDCK3L [18.21]	9	RDCKL	GND	10	GND				
WTCK3L [18.21]	11	WTCKL	WTCKH	12	WTCK3H [18.21]				
GND	13	GND	WTDATAH	14	WTDATA3H [18.21]				
WTDATA3L [18.21]	15	WTDATL	GND	16	GND				
UN3SELH [16.21]	17	UNSELH	UNSELL	18	UN3SELL [16.21]				
SKEND3L [18.21]	19	SKENDL	SKENDH	20	SKEND3H [18.21]				
GND	21	GND	RINDXH	22	N/C				
N/C 23		RINDXH	GND	24	GND				
N/C 25		RSPL	RSPH	26	N/C				

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SMD CONNECTORS

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SHEET 21 OF 21	LEVEL 2	